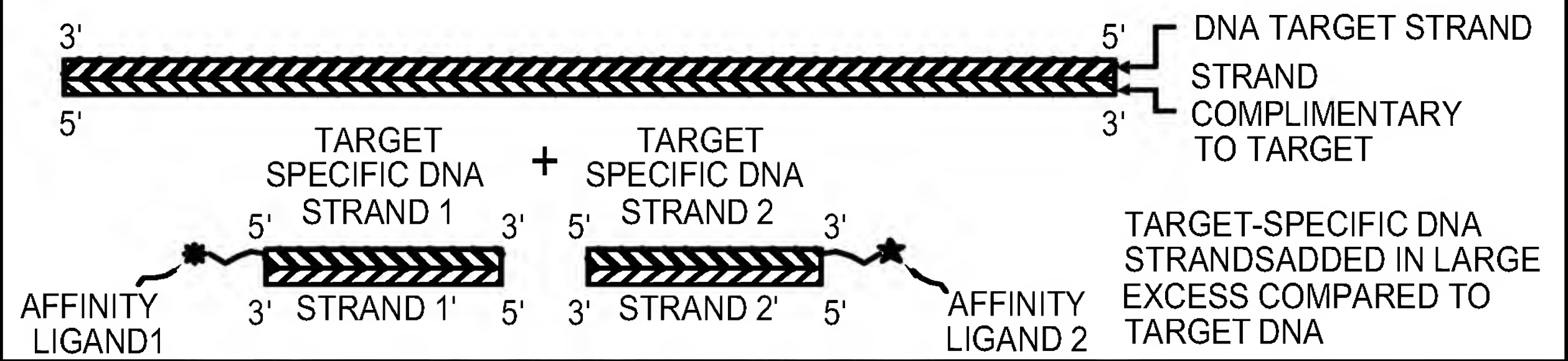


FIG. 1A



↓ HYBRIDIZATION

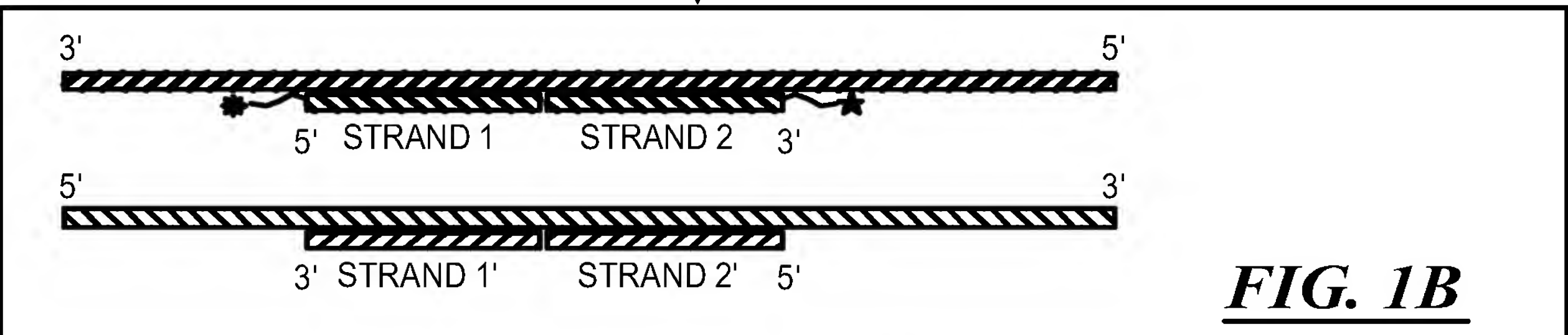


FIG. 1B

↓ LIGATION (MULTIPLE CYCLES)

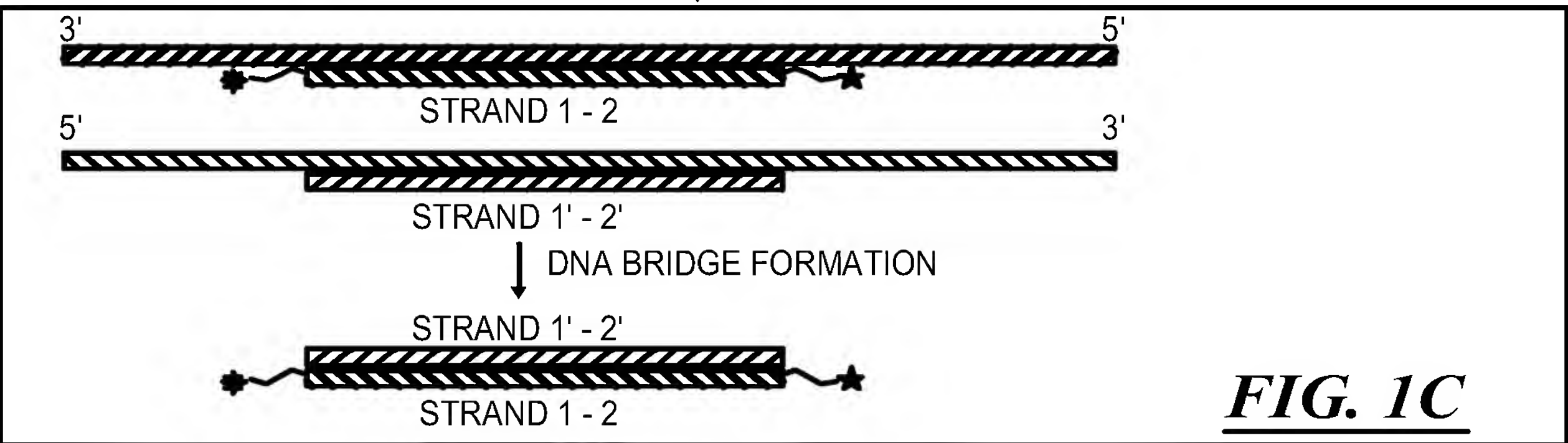


FIG. 1C

↓ ATTACH DNA TO MOLECULAR MOTOR AND DETECTION PROBE

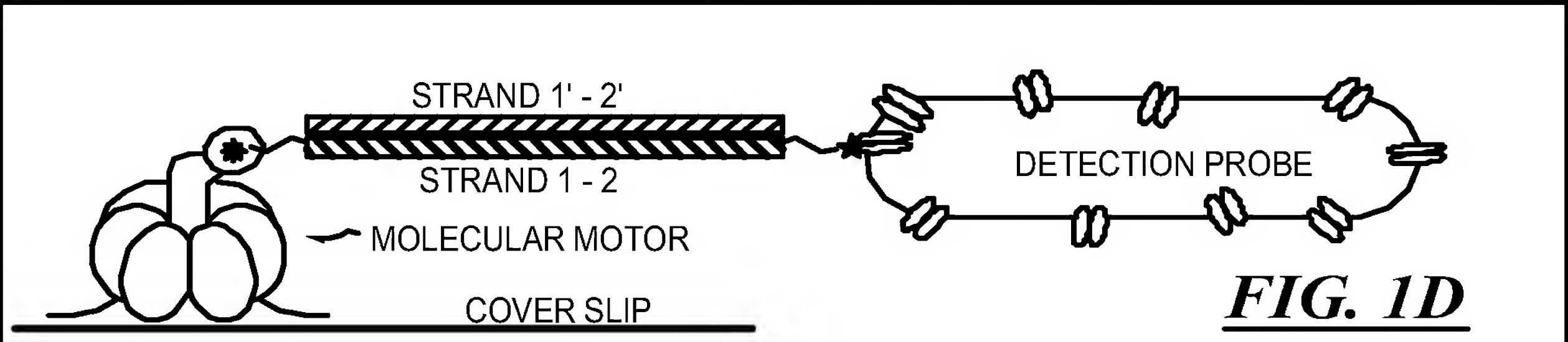
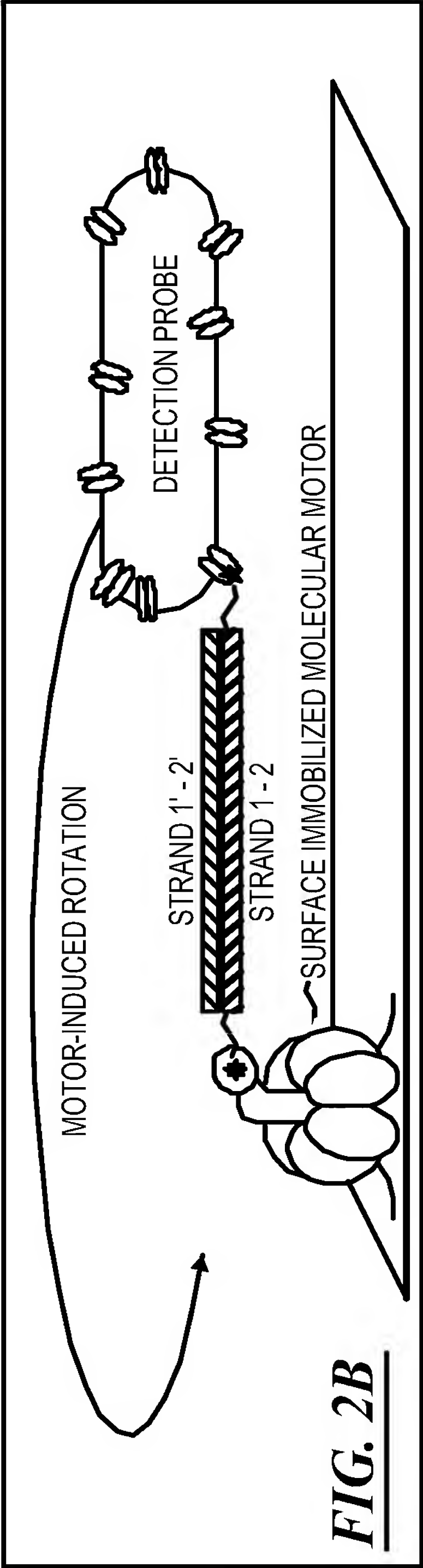
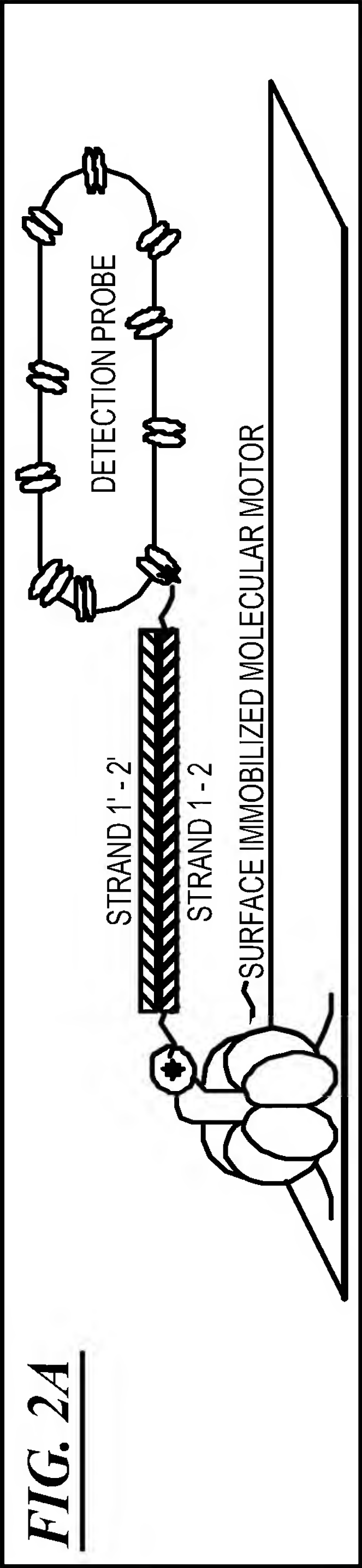


FIG. 1D



COMPLETE ASSEMBLY VS. NONSPECIFIC BINDING

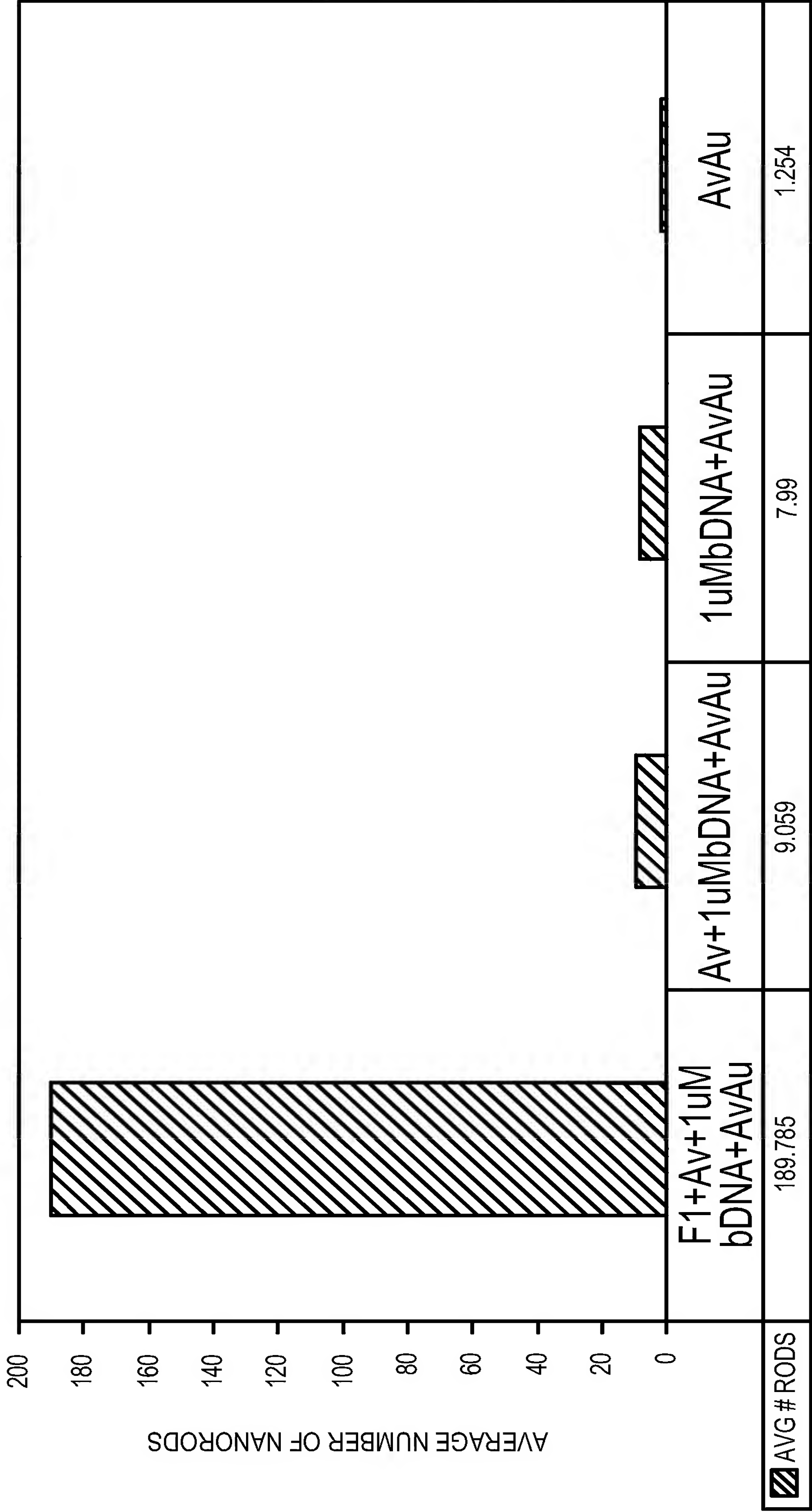


FIG. 3

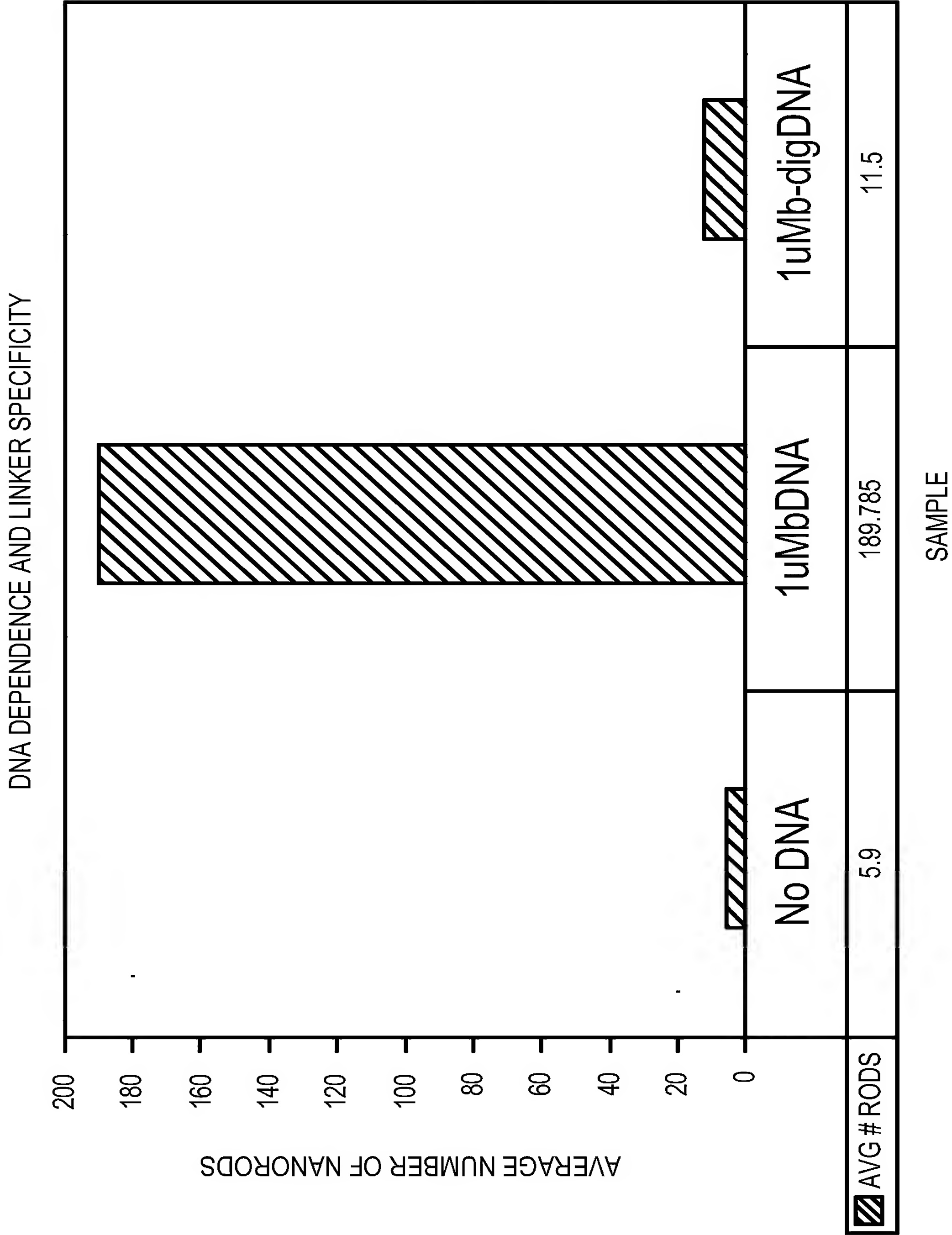


FIG. 4

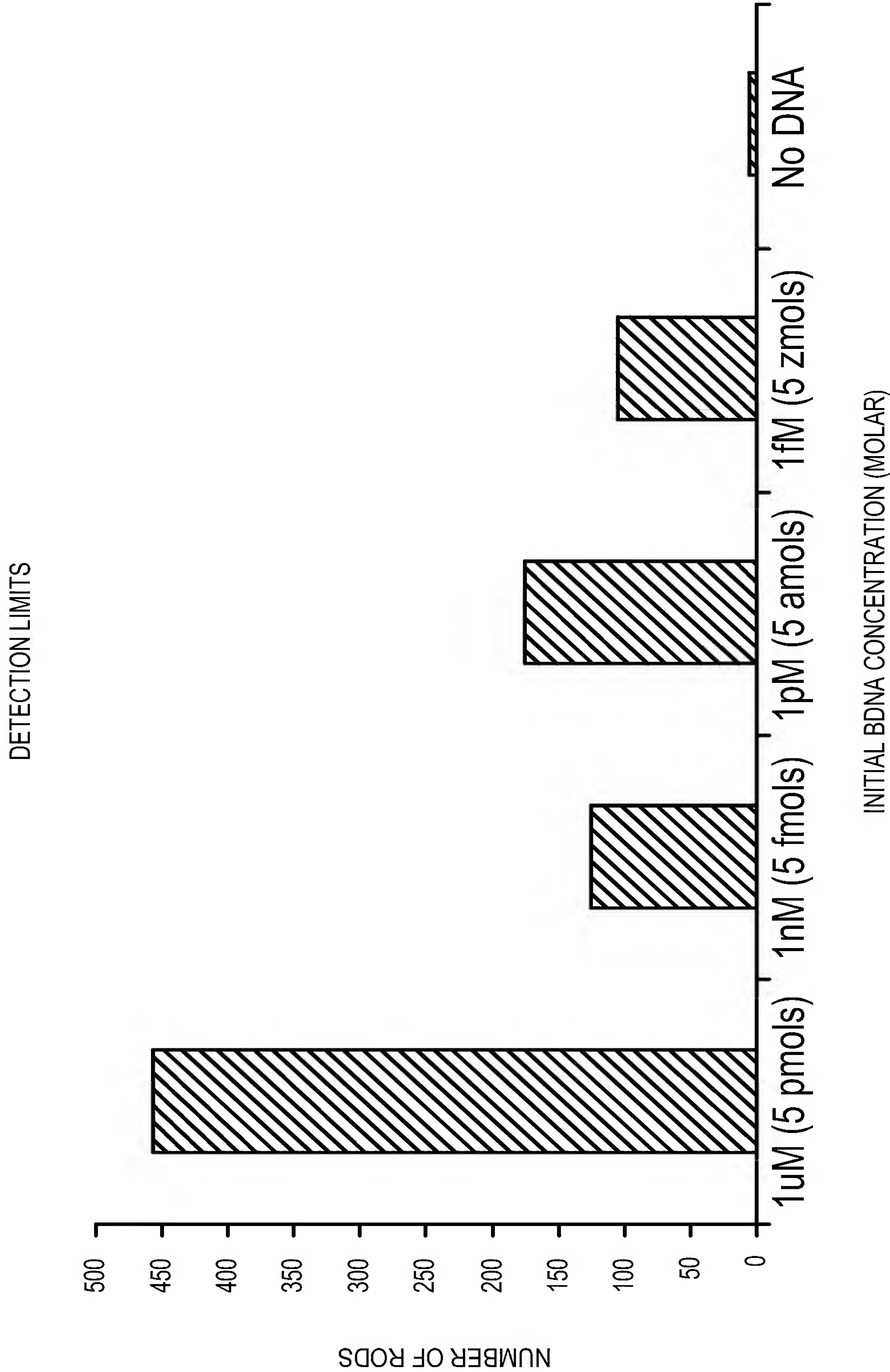


FIG. 5

NUMBER OF NANORODS OBSERVED

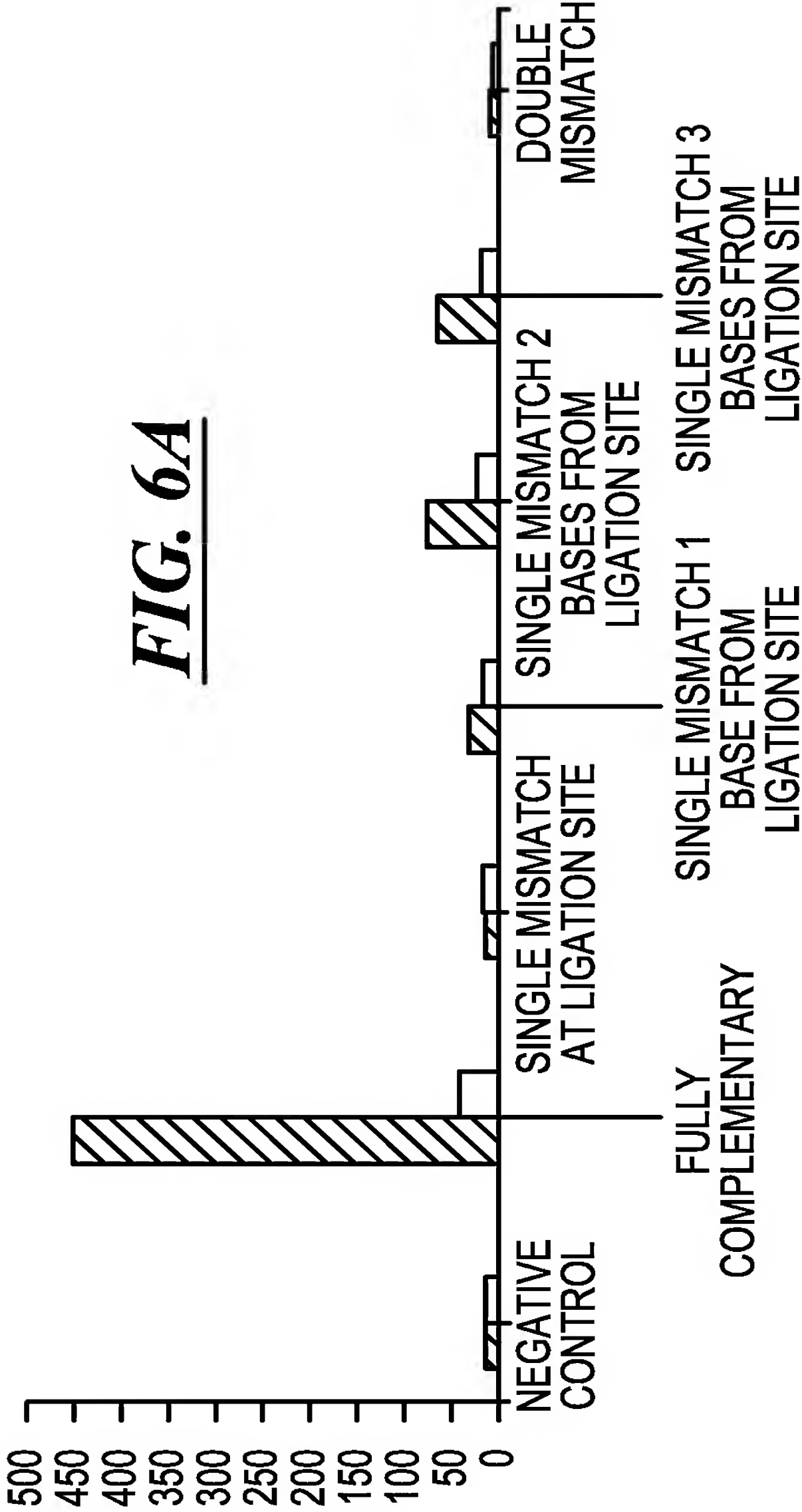


FIG. 6A



TARGET DNA SEQUENCES

FIG. 6B

BINDING SITE FOR TARGET SPECIFIC STRAND 1	BINDING SITE FOR TARGET SPECIFIC STRAND 2
5' GACCTTGCCGAAGGCATGAAAGTTAAGTGTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' FULLY COMPLEMENTARY	
5' GACCTTGCCGAAGGCATGAAAGTTAAGTCTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' SINGLE MISMATCH AT LIGATION SITE	
5' GACCTTGCCGAAGGCATGAAAGTTAAGAGTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' SINGLE MISMATCH 1 BASE FROM LIGATION SITE	
5' GACCTTGCCGAAGGCATGAAAGTTAACTGTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' SINGLE MISMATCH 2 BASES FROM LIGATION SITE	
5' GACCTTGCCGAAGGCATGAAAGTTAIGTGTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' SINGLE MISMATCH 3 BASES FROM LIGATION SITE	
5' GACCTTGCCGAAGGCATGAAAGTTAAGGCTACTGGCCGTATCCTGGAAGTTCGGTTGGC 3' DOUBLE MISMATCH	
	↖ MISMATCHED BASES ARE UNDERLINED